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FLEET AIR DEFENSE IN THE FALKLAND ISLANDS CONFLICT: A FAILURE IN
OPERATIONAL PROTECTION?

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Maritime Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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When the hastily composed British task force was dispatched to liberate the Falkland Islands in the spring of 1982 the difficult challenge of operational protection began. Not only was the task force not equipped for this type of operation but the capabilities and intent of the enemy was unknown. Upon reaching the South Atlantic the British task force commander faced a variety of decisions on courses of action and faced the dilemma of protecting an unprepared fleet and hastily concocted amphibious landing against a superior number of opposing aircraft. The task force commander's operational scheme has been questioned and the grievous cost of recapturing the islands is still controversial.

In this paper I will examine what effect the operational factors of time, force and space had on the task force commanders available courses of action. I will also look at how the task force commander dealt with the dilemma of protecting a shifting operational center of gravity. I will look at the missing components of operational protection and how the operational scheme was developed in hopes of minimizing this critical vulnerability.

Introduction

"Protecting one's forces from a wide range of threats is one of the most important responsibilities of a commander at any level of command"¹

When the initial indications of a possible confrontation in the South Atlantic first appeared the British Fleet was little prepared to protect itself in a war 8000 miles from it's shores². Any *operational scheme* would have to include a plan for *operational protection* of the fleet. British force structure at the time was not designed for power projection in a distant maritime *theatre of operations* and therefore was no longer designed to provide for its own protection. British decisions to limit its fleet to anti-submarine warfare resulted in only two platforms capable of providing fleet air defense to such a remote theatre.³ The strategy of protecting the fleet with land based aircraft looked impossible in any scenario involving the Falklands. Defense of the fleet, and subsequently, any future amphibious operation would have to be accomplished with a limited number of Sea Harrier aircraft, a relatively short range Vertical Takeoff and Landing jet. Combined with the lack of a long-range intercept capability the British had no Airborne Early Warning (AEW) capability to supply threat warning to the fleet. The early warning radar onboard the British escort ships would be the only threat warning available. Surface combatants were fitted with a variety of short and medium range anti-air missiles and that would prove relatively ineffective against even the unsophisticated airborne capabilities of Argentina.

These missing components of operational protection would prove to be the critical vulnerability of the British task force. Minimizing these shortfalls while exploiting the enemy's weaknesses would mean the difference in the war. Had the Argentines developed a more robust operational scheme focused against this critical vulnerability it would have done more than inflict heavy losses, it would have destroyed the British *center of gravity* leading to early British *culmination*.

What effect did the factors of *space, force, and time* have on the operational protection component of the British operational scheme? How did the British task force commander handle the missing components of operational protection and how did those decisions lead to significant losses to the British task force? What were the alternative *courses of action* for *operational maneuver* and how could the airborne assets have been used differently?

Preparations for War: The Factors Time, Force and Space

Time

The *timing* of the Argentine invasion of the Falklands was more a political gamble than a well thought out cohesive plan. The result of the ill-conceived timing was that the elements normally in favor of a surprise invasion were not exploited by the Argentineans. Although caught off guard, the British were more prepared to defend their interests at the time than they would have been just a few months later. With the initial landings and occupation a success, the reaction of the British was the unknown factor. The Argentine command had counted on three assumptions: the British would do nothing to retake the islands; the United States would stay out; and

the United Nations would take no action. Unfortunately for Argentina, they were wrong on all accounts.⁴ The invasion of the Falklands came when the British fleet was in the middle a major shift in strategy and force structure. The British had elected to maintain its contributions to the North Atlantic Treaty Organization rather than support a worldwide defense commitment.⁵ The British fleet would concentrate on anti-submarine warfare in the eastern North Atlantic where air cover and airborne early warning would be supplied by shore based assets.⁶ At the time of the invasion the British had only two aircraft carriers remaining. The 23-year-old H.M.S. Hermes was close to being decommissioned and sold for scrap while the newer H.M.S Invincible was being prepared to be sold to Australia⁷. Had Argentina waited until both of these pending actions were complete it would have been a vastly different force they would encounter than the one in place at the time.

The timing of the invasion gave the British an opportunity to conduct operations that would have been more difficult just a few months later. If Argentina had delayed the invasion until June the grip of the South Atlantic winter would take hold and the task of the British fleet would have been a greater challenge. On the other hand, Argentina had the critical element of surprise in its favor. Argentine forces quickly occupied the islands with little resistance, and with the British fleet so far away, had time to solidify their positions. This is where Argentina made its greatest misjudgment. Instead of using the month of April preparing the Islands for a possible British invasion, the occupying forces sat immobilized by political indecision and inaction. If instead they had made an effort to upgrade the facilities at Port Stanley Airport, the island's only suitable runway, Argentine aircraft would have

had a better opportunity to locate and attack the British Fleet. This achievement alone might have altered the outcome of the conflict.⁸ If Port Stanley airfield were modified to accept tactical aircraft it would have been a much larger, possibly insurmountable task, the British would be forced to undertake.

In addition, the British were not operationally prepared for a major confrontation with Argentina. There were no contingency plans on the shelf and little time to develop them. *Planning time, warning time, and reaction time* were all elements not in favor of the British. *Operational planning* would have to be done in route to the *area of operations*⁹. Forces were not in the state of readiness desired to embark on the type of expedition contemplated and time would be required for mobilization. Little was known of Argentinean capabilities or tactics and what was known was taken from open sources. In order to conduct this operation not only was an offensive operational scheme required but a plan for operational protection of its forces. This was made even more difficult with the missing components of *Intelligence and Warning* that would be difficult to obtain with the limited time involved.

Force

At the breakout of hostilities Argentina possessed a distinct advantage in the number of aircraft available for immediate combat.¹⁰ A successful operational protection scheme would require adequate forces to protect the fleet and landing forces against the numerically superior threat. It appeared the British were lacking the required forces to accomplish this task. The two major threats to the British task

force would be enemy submarines and the large number of land based and sea based aircraft Argentina possessed. With the current British force structure, fleet air defense would have to be organic to the task force. With only the Hermes and Invincible available, fighter protection would have to come from its complement of 28 Sea Harriers¹¹. The Sea Harrier was designed for a role in maritime operations including anti-shipping and anti-submarine support operations as well as short range air defense. It was not optimized for the type of long-range fleet air defense required in the developing scenario. These aircraft could be modified to meet the task but their limited numbers made them a valuable commodity. When fitted with the new Blue Fox air-to-air radar and the American made AIM-9L Sidewinder air-to-air missile it would be a capable air defense asset. The greatest deficiency the British would have to contend with was the lack of an organic Airborne Early Warning (AEW) platform¹².

British preoccupation during the operation would be to achieve and retain air superiority.¹³ This would become extremely difficult with the limited number of aircraft available for fleet air defense and the lack of an AEW capability. The task force would be forced to depend on its escort ships radar for early warning.¹⁴ Although capable systems these radar were not designed for long range early warning. Destroyers like the Type-42 H.M.S. Sheffield had Sea dart missiles and 4.5 inch guns while frigates like the Type-22 H.M.S. Broadsword were equipped with Seawolf missiles.¹⁵ Deficiencies in the Type-42 destroyers like the Sheffield were well known throughout the British Navy. In order to save weight and money these ships carried the Seadart missile system instead of the more capable Seawolf.¹⁶ The

Seadart missile, designed for use to counter medium altitude attacks would leave only the frigates equipped with the Seawolf for defense against low altitude targets.¹⁷ These defenses, combined with the limited number of Sea Harriers, would be all that was available to combat a formidable force of Argentine land based and carrier based aircraft. Most worrisome for the British were the French built Etendards carrying the anti-ship Exocet missile. Although reported to possess only five of these weapons it would plague the British fleet for the entire operation.

A number of *intangible* aspects of force would be in favor of the British. *Morale and discipline, quality of training and operational leadership* were British strong points. At the time, sixteen of the ships that would eventually make up the British task force were at sea off Casablanca training together under the leadership of Admiral Sandy Woodward. Admiral Woodward had previously been stationed on or commanded a number of the ships in the task force. Not only was the task force already working together, his knowledge and experience with the available weapon systems combined with his relationships with the commanders, would be an asset in war. On the other hand, his knowledge of aircraft carriers and their vulnerabilities seemed limited to what he observed during his time as a surface combatant commander. On one occasion during exercises with the U.S. fleet he was able to maneuver his ship within lethal radius of an American aircraft carrier through a simple deceptive maneuver.¹⁸ For the entire conflict this experience would continually affect his decision making with respect to force deployment and maneuver warfare.

Space

The factor of *space* would be the biggest dilemma in operational protection for the British. Not only were great distances involved in the transit to the Falklands but also once there the protection of the fleet in the open ocean would be difficult. With *converging lines of operation (figure 1)* for Argentina, the British would be faced with defending the fleet from a large attack axis. With the limited fleet air defense assets and lack of AEW this would be a formidable task. In addition to a credible air threat from the mainland there was the threat of naval aircraft based on the Argentine aircraft carrier *Veinticinco de Mayo*. Complicating the problem was the constant threat of enemy submarines. Once in the operating area, the geography of the islands combined with the coming winter would complicate the decision on the choice of a spot suitable to conduct an amphibious operation that would also facilitate an adequate air defense of the fleet. The weather would affect the availability of aircraft for logistical efforts as well as offensive and defensive missions.

For Argentina the enormous distances involved in achieving an attack on the British fleet had the greatest bearing on its tactics. The 800-1000 mile round trip put their aircraft at the edge of their fuel limits. Without a suitable airfield on the islands, locating and attacking the British task force would be an onerous task. Although converging lines of operation would normally be an advantage for the attacker, the distances involved negated any benefits.

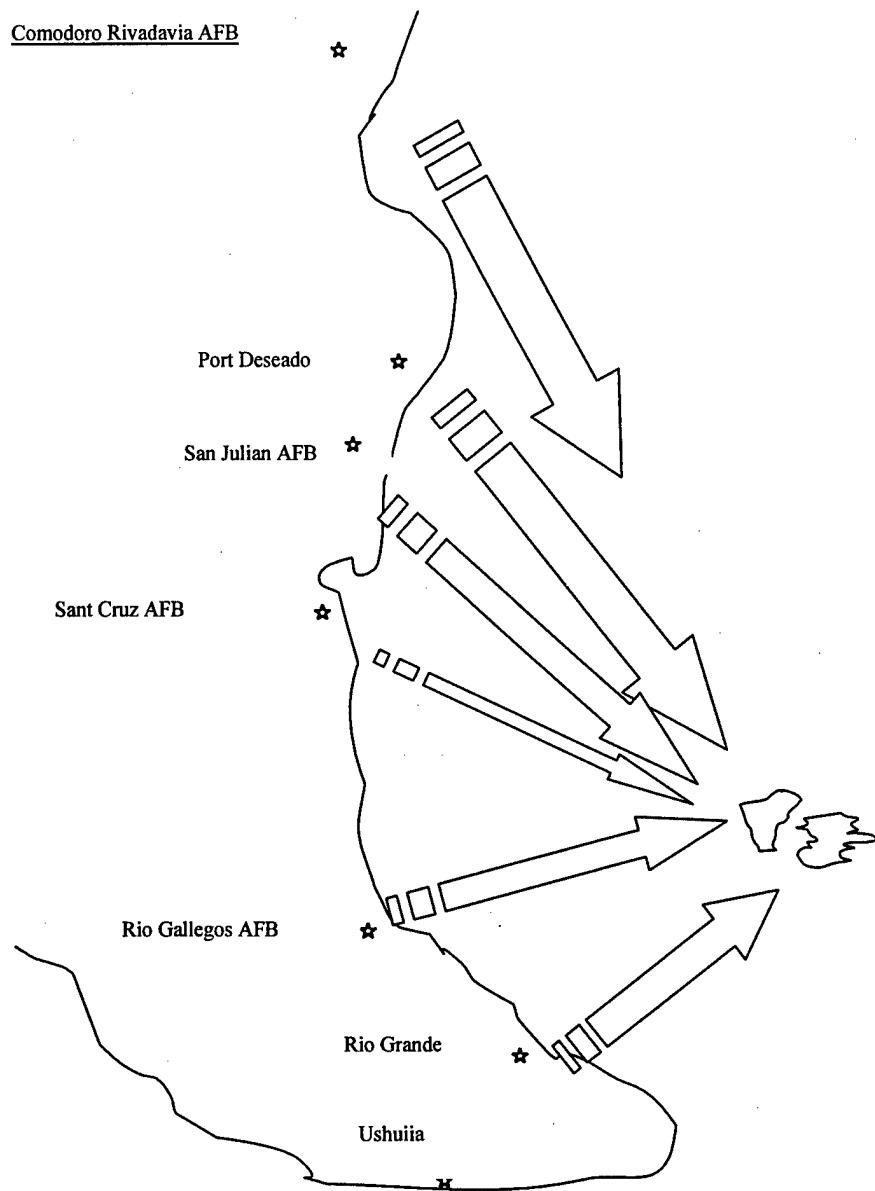


Figure 1. Converging Lines of Operation

Confrontation

*"No operational commander can go wrong if he decides to fully protect his center of gravity, while temporarily weakening the protection of other forces deployed in the theater."*¹⁹

Early failure

Once on station in the Falkland area of operations the difficult task of operational protection began. Admiral Woodward correctly determined that the British *operational center of gravity* in this operation were the carriers Hermes and Invincible.²⁰ Upon arrival in the area of operations the task force was positioned outside the range of land based aircraft as he prepared the task force for a possible air attack originating from the *Veinticinco de Mayo*²¹. This threat never materialized and the primary concern became the land based Etendards carrying the Exocet. If one of these formidable missiles made it to one of the carriers then Admiral Woodward determined that the war would be over before it even really started. The British Commander-in-Chief's staff at fleet headquarters in Northwood agreed. In the days leading up to initial hostilities Woodward states:

"It had already been agreed between Northwood and myself that major damage to Hermes or to Invincible (our vital 'second deck'), would probably cause us to abandon the entire Falkland Island operation."²²

With this being said, it is evident that in the early days of the conflict the strategic objective of recapturing the islands would only be accomplished if the

operational protection of the British center of gravity were successful. The *critical vulnerability* in accomplishment of this goal was the British fleet air defenses and lack of an AEW capability. Once the decision to keep its fleet at home was made, the Argentine operational center of gravity became its land-based aircraft. An operational scheme to neutralize or protect against this threat would mean the difference in the war.

In preparation for a possible retaliatory strike against one of the carriers following the sinking of the Argentine cruiser *Belgrano*, Admiral Woodward set up a "Classic anti-air attack formation...." This type of defense is known as "defense in depth" and is characterized by positioning layers of aircraft and ships to protect against incoming attacks prior to them reaching the high value units at the center of the defenses.²³ The three Type-42 cruisers were positioned 80 nautical miles west of the carriers with the Type-22 frigates in 50 nautical miles from there. The Sea Harriers would fly an outer layer from the Type-42s to intercept incoming aircraft at maximum range. Warning of incoming threats is an integral part of this strategy. With no AEW platform the surface combatants would have to rely on each other to provide threat warning. Nothing in this combination was designed to detect low altitude, high-speed incoming aircraft or missiles at long range. On the day of the attack on the Sheffield, Admiral Woodward moved the task force further west in order to facilitate Sea Harrier attacks on the Port Stanley runway. With the fleet air defenses being the critical vulnerability of the British then it should have been their priority to maximize use of the assets available. Economy of force should have dictated the judicious use of the limited number of Harriers available. Some evidence

suggests that on that day the aircraft portion of the layered defense may have been misused. The Sheffield was attacked and eventually sunk by a low altitude attack by Argentine Etendards launching the Exocet. At the time of the incident some of the Harriers were being used to do surface search for hostile shipping while others were doing ground attack on the airfield.²⁴ It is still up to debate whether this tactical decision proved to be the deciding factor in this engagement but any use of airborne assets for other than fleet air defense may have been a crucial mistake. Maintaining a surface picture was important, but accomplishing the task with aircraft may not have been the most judicious use of this limited resource. Although there is much speculation on why the Sheffield was not more prepared for its own self-defense it is apparent that it was the first target available to the incoming attackers and therefore absorbed the missile rather than either of the more critical carriers. The loss was devastating to the British and graphically exposed the weakness in the overall protection plan as well as the vulnerability of British ships to low altitude attack. The British had trained to a Soviet attack with the assumption they would have 20 minutes to react to an incoming threat. Instead, they had only about two and a half minutes to respond and then did not have the weapon systems capable of defeating the threat.²⁵ In hindsight, the operational protection of the center of gravity during this engagement was successful but at an exorbitant cost to the British fleet.

Bomb Alley

With the sting of the loss of the Sheffield still fresh, Admiral Woodward and his staff began planning for the recapture of the islands. The choice of a landing sight

for the amphibious phase of the operation came after much discussion and debate. Protection of the fleet as well as providing support for the landings would be the primary factor in choosing a course of action. By this time it was apparent to Admiral Woodward that he would never achieve the total air superiority normally required to complete a successful amphibious landing. Political realities dictated that the landings would go on regardless. By this point it had become evident that attacking and disabling a carrier had become the primary objective of the Argentine Air and Naval forces. Admiral Woodward recalled his dilemma when he stated:

“I had to provide enough air defense for the amphibious group, yet I had to protect the carriers, otherwise there might be no air cover for anyone.”²⁶

Several factors lead to the choice of San Carlos as the landing sight. The beaches would be “*partially protected from air attack*”(emphasis added)²⁷, the depth of the water was sufficient and entrances could be effectively protected.²⁸ The problem with this choice was its vulnerability to air attack. In order to protect the carriers from further attack Admiral Woodward decided to keep them far to the east. Due to fuel considerations this positioning would not allow the Sea Harriers to fly to a position far enough west to provide an outer layer of defense for the fleet and landing forces. In addition, concentrating surface forces in these waters took away the desired defense-in-depth. Providing protection for an armada of ships in confined waters would be much more difficult than in the open ocean.²⁹

A number of alternate courses of action were proposed. One of these would have put at least one of the carriers closer to Carlos waters in order to enable the Sea Harriers to set up low altitude combat air patrols on the western side of West Falkland Island. Combined with the stationing of some of the picket ships closer to the Argentine mainland this course of action may have enabled the interception of incoming raids prior to reaching Falkland Sound. This scenario was suggested by the Commanding Officers of the Brilliant and The Invincible.³⁰ Woodward rejected the plan as too risky to the carriers.³¹ In addition, he was not completely confident in the reliability of the Sea dart and Seawolf systems and was fearful that positioning the picket ships at that distance would make it very difficult to accomplish a rescue if required.³² Although this plan would not have provided full coverage for the entire threat sector it could have provided enough resistance to incoming attackers to thwart their attack prior to reaching the anchorage. The Argentine tactic was to fly a medium altitude profile while refueling in route from the mainland then letting down to low altitude ingress at approximately 50 nautical miles from the fleet. Harriers positioned to attack incoming aircraft prior to the low altitude portion of this profile may have been effective in deterring incoming attacks. As it turned out, the incoming Argentine attackers made it to Falkland sound before they were forced to deal with the British defenses. The nearby land mass provided a convenient navigational reference and was used to conceal attack until the last possible minute. This made the attacks hard to detect and reaction time minimal.³³

Another course of action proposed by a faction within the British fleet was to challenge the Argentines directly by taking the entire task force west of the

Falklands.³⁴ Admiral Woodward rejected this apparently more bold approach. The Exocet threat was still too great and the possibility of more bombing attacks against the proven unreliable defenses was a risk he was not willing to take.³⁵ Others in the task force proposed attacking the Argentine center of gravity directly by bombing or sabotaging its aircraft on the airfields on the mainland. This plan would have met one of the tenants of operational protection by eliminating the enemy's air attack capabilities while still on the ground.³⁶ Besides being extremely difficult from a tactical standpoint this proposal was rejected for political reasons. Attacking the mainland would escalate the war past what was supported by United Nations resolutions and the possibility of losing international support was very real.³⁷

Admiral Woodward eventually chose to keep the carriers a safe distance to the east of the islands and provide as much support as possible from that position. His experience with the US fleet prior to the war and more recently with the Sheffield incident re-enforced his belief that defense of the fleet would be more than difficult; it would be almost impossible. The surface units would have to provide air defense from the confines of the Falkland Sound and Carlos waters while the Sea Harriers would maintain medium altitude over the area. The Sea Harrier limited time on station due to fuel constraints, combined with altitude restrictions set up for deconfliction with the surface combatant defenses would eliminate any low altitude intercept capability. The result was short reaction time for the surface combatants, short on-station times for the Harriers, and only last second point-defense for the troop transports and cargo ships.

During the amphibious phase of the operation the British center of gravity was shifting from the carriers to the landing forces on the ground.³⁸ During this critical time it was imperative to protect those forces. Admiral Woodward correctly determined that without the carriers there would be no landings but conversely a major hit on a fully laden troop transport may have just as easily ended the operation. Had the Argentineans made an effort to attack the transports and landing forces instead of the combatants the battle may have proved too costly for the British and the landings called off. In addition, had the Argentine bombs fused correctly the damage to the British Fleet would have been even more grievous. Although Admiral Woodward may have recognized this shift in the center of gravity he was unwilling to accept a greater risk to his carriers in the name of a more effective air defense. This controversial decision may have saved the carriers from a decisive blow but exposed his landing forces to unacceptable risks. After the first day air attacks the forces in the sound reorganized into a more concentrated formation. It became apparent that the surface combatants were only partially able to protect themselves in the open waters of the Falkland Sound and the more confined space of the Carlos Waters. The Sea Harriers had been effective in shooting down aircraft after their attacks but could do little to stop the incoming attackers prior to releasing their bombs.

Admiral Woodward's concern about a final attempt to sink a carrier proved correct when on the 25th of May Argentine aircraft armed with the remaining Exocet missiles launched an attack on the carriers and the remaining picket ships left to protect them. The result of this attack was the loss of the container ship Atlantic Conveyer and her precious cargo of Chinook helicopters. The task force air defenses

proved efficient but the unprotected commercial ship was almost defenseless. It was an extremely close call for the Invincible that had been steaming nearby. It appeared to confirm everything Admiral Woodward feared concerning the vulnerability of his carriers even in this relatively 'safe' position.

Although the Argentines were taking great losses from the Sea Harriers and ship missile systems the situation for the British was quickly becoming untenable. The task force now was stretched to its limits and any more losses could leave the landing forces stranded on the beaches. The battle of "Bomb alley" as the British called it or "Missile pass" as it was known to the Argentine pilots became a war of attrition in the waters of San Carlos. Fortunately for the British, with half of their aircraft and pilots lost, the Argentineans could no longer sustain the losses and were fast approaching their culminating point. With the Argentine center of gravity greatly diminished the outcome of the conflict was inevitable.

Conclusion

When Argentina invaded the Falkland Islands neither country involved was properly prepared or equipped for war. Britain's political decision to retake the islands left the task force with a formidable task. Due to British force structure at the time many of the components required for an effective operational protection scheme were not available to the task force commander. Admiral Woodward quickly learned the consequences of an inadequate air defense and lack of an airborne early warning capability. Combined with unreliable systems this critical vulnerability plagued him

during the entire conflict. He continuously evaluated alternate courses of action and if criticism can be found it is only in his extreme caution in protecting the British carriers. Some individual tactical decisions on use of assets may be questioned but his overall operational scheme was sound. On the other hand, had the Argentineans more efficiently targeted the troop transports during the landing phase of the operations the conflict may have ended quite differently.

The primary factors leading to failure in operational protection was the task force's lack of an effective air defense combined with the political decision to invade without first ensuring air superiority. The strategic decision to abandon carrier aviation proved to be a costly one on the operational level. Any strategic goal involving projecting power as part of its operational scheme would be doomed to failure. A fleet without air superiority is a vulnerable one and without airborne early warning this goal is near impossible. Although they never achieved air superiority during the Falklands the British Harriers did a superb job of neutralizing the Argentine Air Force. Combined with limited success by the surface combatants, losses to the Argentine Air Force were so heavy they eventually lost their ability and will to continue. Rather than a failure in operational protection the British experience in the Falklands demonstrates how maximizing maneuver and varying the operational scheme can make up for shortfalls in the components required for effective operational protection. Although they did not have the required forces to properly undertake the operation the British still managed to secure a victory many thought impossible. The lesson of the Falkland Islands conflict is that protection of ones center of gravity is paramount for victory. When considering ways, ends and means

the element of risk can not be under emphasized. It is difficult in the heat of battle to recognize a shift in the center of gravity buy identifying this can be the difference between victory and defeat.

NOTES

¹ Vego, Milan. On Operational Art (Third Draft). (Newport: Naval War College, September 1998), 228.

² Dar, E.H. "Strategy in the Falklands War." U.S. Naval Institute Proceedings, March 1983, 133.

³ Jones, R.V. "The Falklands: An Unplanned Contingency in Air Defense." Journal of Electronic Defense, June 1983, 60.

⁴ Middlebrook, Martain. Task Force: The Falklands War, 1982. (London: Penguin Books, 1982), 62.

⁵ Udemi, Joseph F. "Modified to Meet the Need: British Aircraft in the Falklands." Airpower Journal, Spring 1989, 52.

⁷ Middlebrook, Martain. Task Force: The Falklands War, 1982. (London: Penguin Books, 1982), 62.

⁸ Duffner, Robert W. "Conflict in the South Atlantic." Air University Review, March-April 1984, 79-87.

⁹ Manaul, Stewart W. B. "The Falklands Campaign: A War of Yesterday?" Strategic Review, Fall 1982, 83.

¹⁰ Duffner, Robert W. "Conflict in the South Atlantic." Air University Review, March-April 1984, 80.

¹¹ Manaul, Stewart W. B. "The Falklands Campaign: A War of Yesterday?" Strategic Review, Fall 1982, 83.

¹² Ibid, 84.

¹³ Dar, E.H. "Strategy in the Falklands War." U.S. Naval Institute Proceedings, March 1983, 134.

¹⁴ Manaul, Stewart W. B. "The Falklands Campaign: A War of Yesterday?" Strategic Review, Fall 1982, 88.

¹⁵ Ibid, 88.

¹⁶ Hastings, Max and Jenkins, Simon. The Battle for the Falklands. (New York: Norton,

1983), 152.

¹⁷ Manaul, Stewart W. B. "The Falklands Campaign: A War of Yesterday?" Strategic Review, Fall 1982, 88.

¹⁸ Woodward, Sandy. One Hundred Days. (Annapolis, MD: Naval Institute Press 1992), 65-66.

¹⁹ Vego, Milan. On Operational Art (Third Draft). (Newport: Naval War College, September, 1998), 232.

²⁰ Although "center of gravity" was not specifically used, Admiral Woodward repeatedly referred to the importance of the carriers in a context consistent with the definition of this term.

²¹ Manaul, Stewart W. B. "The Falklands Campaign: A War of Yesterday?" Strategic Review, Fall 1982, 84.

²² Woodward, Sandy. One Hundred Days. (Annapolis, MD: Naval Institute Press 1992), 5.

²³ Ward, 'Sharky'. Sea Harrier Over the Falklands. (Annapolis, MD: Naval Institute Press, 1992), 115-116.

²⁴ Ibid, 172.

²⁵ Hastings, Max and Jenkins, Simon. The Battle for the Falklands. (New York: Norton, 1983), 153.

²⁶ Woodward, Sandy. One Hundred Days. (Annapolis, MD: Naval Institute Press 1992), 231.

²⁷ Ibid, 189.

²⁸ Ibid, 189.

²⁹ Hastings, Max and Jenkins, Simon. The Battle for the Falklands. (New York: Norton, 1983), 153.

³⁰ Woodward, Sandy. One Hundred Days. (Annapolis, MD: Naval Institute Press 1992), 231.

³¹ Ibid, 231.

³² Hastings, Max and Jenkins, Simon. The Battle for the Falklands. (New York: Norton, 1983), 162.

- ³³ Lake, Julian S. "Taking a New Look at Naval Needs After the Falklands." Defense Electronics, October 1982, 72.
- ³⁴ Hastings, Max and Jenkins, Simon. The Battle for the Falklands. (New York: Norton, 1983), 162.
- ³⁵ Ibid, 162.
- ³⁶ Vego, Milan. On Operational Art (Third Draft). (Newport: Naval War College,
- ³⁷ Hastings, Max and Jenkins, Simon. The Battle for the Falklands. (New York: Norton, 1983), 162.
- ³⁸ Vego, Milan. On Operational Art (Third Draft). (Newport: Naval War College, September 1998), 143.

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